Terms used
semiconductor device and **first RAM** and **second RAM** and **secret key holder** and **bus port** and **CPU** and **con**

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1 Algorithms and data structures for flash memories
Eran Gal, Sivan Toledo
June 2005 **ACM Computing Surveys (CSUR)**, Volume 37 Issue 2
Publisher: ACM Press
Full text available: pdf(343.39 KB) Additional Information: full citation, abstract, references, citings, i

Flash memory is a type of electrically-erasable programmable read-only memory (EEPROM). Be nonvolatile and relatively dense, they are now used to store files and other persistent objects ir phones, digital cameras, portable music players, and many other computer systems in which m inappropriate. Flash, like earlier EEPROM devices, suffers from two limitations. First, bits can on large block of memory. S ...

Keywords: EEPROM memory, Flash memory, wear leveling

2 Hardware Engines for Bus Encryption: A Survey of Existing Techniques
R. Elbaz, L. Torres, G. Sassatelli, P. Guillemin, C. Anguille, M. Bardouillet, C. Buatois, J. B. Rigaud
March 2005 **Proceedings of the conference on Design, Automation and Test in Europe - **
Publisher: IEEE Computer Society
Full text available: pdf(194.68 KB) Additional Information: full citation, abstract, index terms

The widening spectrum of applications and services provided by portable and embedded device: concerns in security. Most of those embedded systems (pay-TV, PDAs, mobile phones, etc...) m As a result, the main problem is that data and instructions are constantly exchanged between n clear form on the bus. This memory may contain confidential data like commercial software or p the end-user or the c ...

3 GPGPU: general purpose computation on graphics hardware
David Luebke, Mark Harris, Jens Krüger, Tim Purcell, Naga Govindaraju, Ian Buck, Cliff Woolley, A
August 2004 **ACM SIGGRAPH 2004 Course Notes SIGGRAPH '04**
Publisher: ACM Press
Full text available: pdf(63.03 MB) Additional Information: full citation, abstract, citings

The graphics processor (GPU) on today's commodity video cards has evolved into an extremely processor. The latest graphics architectures provide tremendous memory bandwidth and compu fully programmable vertex and pixel processing units that support vector operations up to full I High level languages have emerged for graphics hardware, making this computational power ac

GPUs are highly parallel s ...

4 A survey of commercial parallel processors

Edward Gehringer, Janne Abullarade, Michael H. Gulyn
September 1988 **ACM SIGARCH Computer Architecture News**, Volume 16 Issue 4
Publisher: ACM Press
Full text available: pdf(2.96 MB) Additional Information: full citation, abstract, citings, index terms

This paper compares eight commercial parallel processors along several dimensions. The proces multiprocessors (the Encore Multimax, the Sequent Balance system, the Alliant FX series, and t four network multiprocessors (the BBN Butterfly, the NCUBE, the Intel iPSC/2, and the FPS T Se the computers from the standpoint of interconnection structures, memory configurations, and ir Also, the share ...

5 Architectural Support for High Speed Protection of Memory Integrity and Confidentiality in I

Weidong Shi, Hsien-Hsin S. Lee, Mrinmoy Ghosh, Chenghuai Lu
September 2004 **Proceedings of the 13th International Conference on Parallel Architectures Techniques PACT '04**
Publisher: IEEE Computer Society
Full text available: pdf(255.33 KB) Additional Information: full citation, abstract

Recently there is a growing effort in both the architecture and the security community to create authenticating system memory.As shown in the previous work, hardware-based memory authei component for creating future trusted computing environments and digital rights protection.Alm focused on authenticating memory exclusively owned by a single processing element.However, platforms, memory is often ...

6 System-level power optimization: techniques and tools

Luca Benini, Giovanni de Micheli
April 2000 **ACM Transactions on Design Automation of Electronic Systems (TODAES)**, V
Publisher: ACM Press
Full text available: pdf(385.22 KB) Additional Information: full citation, abstract, references, citings, i

This tutorial surveys design methods for energy-efficient system-level design. We consider elect hardware platform and software layers. We consider the three major constituents of hardware t computation, communication, and storage units, and we review methods of reducing their ener study models for analyzing the energy cost of software, and methods for energy-efficient softwa This survery ...

7 Cryptography as an operating system service: A case study

Angelos D. Keromytis, Jason L. Wright, Theo De Raadt, Matthew Burnside
February 2006 **ACM Transactions on Computer Systems (TOCS)**, Volume 24 Issue 1
Publisher: ACM Press
Full text available: pdf(669.12 KB) Additional Information: full citation, abstract, references, index ter

Cryptographic transformations are a fundamental building block in many security applications a performance, several vendors market hardware accelerator cards. However, until now no opera mechanism that allowed both uniform and efficient use of this new type of resource.We present Framework (OCF), a service virtualization layer implemented inside the operating system kerne access to accelerator functio ...

Keywords: Encryption, authentication, cryptographic protocols, digital signatures, hash functio

8 Forth: Ten years of Forth in ACM Sigplan Notices: part 2

Paul Frenger

April 2006 **ACM SIGPLAN Notices**, Volume 41 Issue 4
Publisher: ACM Press
Full text available: pdf(268.55 KB) Additional Information: full citation, abstract, references, index ter

Last column, we began a two-part retrospective to recap the first ten years of the *ACM Sigplan* walk through memory lane began with a history lesson: who Chuck Moore is, the origins of the Forth software and hardware incarnations, some vendors, conferences, and a few tall tales. We *SIG-Forth* and its four-year *Newsletter*, and how phoenix-like their ashes gave rise to the ten-y

9 Power reduction techniques for microprocessor systems
Vasanth Venkatachalam, Michael Franz
September 2005 **ACM Computing Surveys (CSUR)**, Volume 37 Issue 3
Publisher: ACM Press
Full text available: pdf(602.33 KB) Additional Information: full citation, abstract, references, index ter

Power consumption is a major factor that limits the performance of computers. We survey the " that reduce the total power consumed by a microprocessor system over time. These techniques ranging from circuits to architectures, architectures to system software, and system software tc include holistic approaches that will become more important over the next decade. We conclude a ...

Keywords: Energy dissipation, power reduction

10 RAID: high-performance, reliable secondary storage
Peter M. Chen, Edward K. Lee, Garth A. Gibson, Randy H. Katz, David A. Patterson
June 1994 **ACM Computing Surveys (CSUR)**, Volume 26 Issue 2
Publisher: ACM Press
Full text available: pdf(3.60 MB) Additional Information: full citation, abstract, references, citings, i

Disk arrays were proposed in the 1980s as a way to use parallelism between multiple disks to i performance. Today they appear in the product lines of most major computer manufacturers. T comprehensive overview of disk arrays and provides a framework in which to organize current a article introduces disk technology and reviews the driving forces that have popularized disk arra reliability. It discusses the tw ...

Keywords: RAID, disk array, parallel I/O, redundancy, storage, striping

11 Special issue: AI in engineering
D. Sriram, R. Joobbani
April 1985 **ACM SIGART Bulletin**, Issue 92
Publisher: ACM Press
Full text available: pdf(8.79 MB) Additional Information: full citation, abstract

The papers in this special issue were compiled from responses to the announcement in the July newsletter and notices posted over the ARPAnet. The interest being shown in this area is reflect received from over six countries. About half the papers were received over the computer netwo

12 MANTIS OS: an embedded multithreaded operating system for wireless micro sensor platf
Shah Bhatti, James Carlson, Hui Dai, Jing Deng, Jeff Rose, Anmol Sheth, Brian Shucker, Charles G Richard Han
August 2005 **Mobile Networks and Applications**, Volume 10 Issue 4
Publisher: Kluwer Academic Publishers
Full text available: pdf(1.27 MB) Additional Information: full citation, abstract, references, index ter

The MANTIS MultimodAl system for NeTworks of In-situ wireless Sensors provides a new multitl embedded operating system for wireless sensor networks. As sensor networks accommodate in as compression/aggregation and signal processing, preemptive multithreading in the MANTIS s micro sensor nodes to natively interleave complex tasks with time-sensitive tasks, thereby miti producer-consumer problem. To ac ...

Keywords: cross-platform, dynamic reprogramming, embedded operating system, lightweight, sensor networks

13 The Alpha demonstration unit: a high-performance multiprocessor

Charles P. Thacker, David G. Conroy, Lawrence C. Stewart
February 1993 **Communications of the ACM**, Volume 36 Issue 2
Publisher: ACM Press
Full text available: pdf(6.26 MB) Additional Information: full citation, references, citings, index term

Keywords: Alpha AXP chip

14 Burroughs Corporation: corporate public relations

October 1974 **ACM SIGMICRO Newsletter**, Volume 5 Issue 3
Publisher: ACM Press
Full text available: pdf(7.37 MB) Additional Information: full citation

15 The evolution of the DECsystem 10

C. G. Bell, A. Kotok, T. N. Hastings, R. Hill
January 1978 **Communications of the ACM**, Volume 21 Issue 1
Publisher: ACM Press
Full text available: pdf(1.92 MB) Additional Information: full citation, abstract, references, citings, i

The DECsystem 10, also known as the PDP-10, evolved from the PDP-6 (circa 1963) over five g implementations to presently include systems covering a price range of five to one. The origin a operating system, and languages are described in terms of technological change, user requirem The PDP-10's contributions to computing technology include: accelerating the transition from b computing systems; ...

Keywords: architecture, computer structures, operating system, timesharing

16 Personal distributed computing: the Alto and Ethernet hardware

Chuck Thacker
January 1986 **Proceedings of the ACM Conference on The history of personal workstations**
Publisher: ACM Press
Full text available: pdf(1.69 MB) Additional Information: full citation, abstract, references, citings, i

Between 1972 and 1980, the first distributed personal computing system was built at the Xerox The system was composed of a number of Alto workstations connected by an Ethernet local net that provided centralized facilities. This paper describes the development of the hardware that

17 Neon: a single-chip 3D workstation graphics accelerator

Joel McCormack, Robert McNamara, Christopher Gianos, Larry Seiler, Norman P. Jouppi, Ken Corre
August 1998 **Proceedings of the ACM SIGGRAPH/EUROGRAPHICS workshop on Graphics I**

Publisher: ACM Press
Full text available: pdf(1.58 MB) Additional Information: full citation, references, citings, index terms

Keywords: chunk rendering, direct rendering, graphics pipeline, level of detail, rasterization, t

18 PicoDBMS: Scaling down database techniques for the smartcard
Philippe Pucheral, Luc Bouganim, Patrick Valduriez, Christophe Bobineau
September 2001 **The VLDB Journal — The International Journal on Very Large Data Bases**,
Publisher: Springer-Verlag New York, Inc.
Full text available: pdf(259.03 KB) Additional Information: full citation, abstract, citings, index terms

Smartcards are the most secure portable computing device today. They have been used succes money, and proprietary and personal data (such as banking, healthcare, insurance, etc.). As sn (with 32-bit CPU and more than 1 MB of stable memory in the next versions) and become multi database management arises. However, smartcards have severe hardware limitations (very slo constrained stable mem ...

Keywords: Atomicity, Durability, Execution model, PicoDBMS, Query optimization, Smartcard a

19 1 - Special Section: Efficient software implementation of embedded communication protoc

asynchronous software thread integration with time- and space-efficient procedure calls
Nagendra J. Kumar, Vasanth Asokan, Siddhartha Shivshankar, Alexander G. Dean
February 2007 **ACM Transactions on Embedded Computing Systems (TECS)**, Volume 6 Issue 1
Publisher: ACM Press
Full text available: pdf(596.75 KB) Additional Information: full citation, abstract, references, index ter

The overhead of context switching limits efficient scheduling of multiple concurrent threads on a requirements exist. A software-implemented protocol controller may be crippled by this problen be too short to recover through context switching, so only the primary thread can execute durir the secondary threads and potentially missing deadlines. Asynchronous software thread integra calls a ...

Keywords: Asynchronous software thread integration, J1850, fine-grain concurrency, hardwar software-implemented communication protocol controllers

20 Cache memory performance in a unix enviroment

Cedell Alexander, William Keshlear, Furrokh Cooper, Faye Briggs
June 1986 **ACM SIGARCH Computer Architecture News**, Volume 14 Issue 3
Publisher: ACM Press
Full text available: pdf(2.10 MB) Additional Information: full citation, citings, index terms

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